

CHAPTER ELEVEN

FRONT SUSPENSION AND STEERING

This chapter contains repair and replacement procedures for the front suspension and steering components. During inspection, compare measurements to the specifications in **Table 1**. Replace any part that is damaged or out of specification. During assembly, tighten fasteners as specified. **Table 1** and **Table 2** are at the end of this chapter.

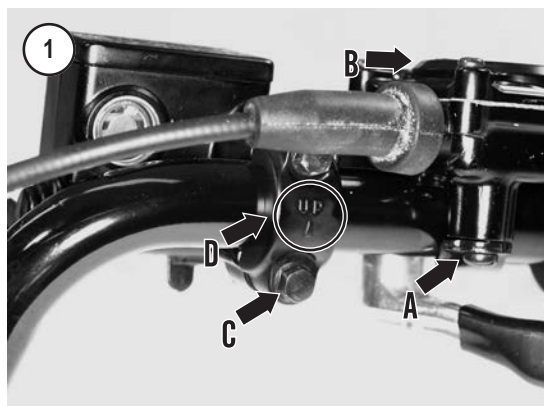
HANDLEBAR

Removal

CAUTION

Cover the seat, fuel tank and front fender with plastic to protect it from brake fluid spills. Brake fluid damages the finish on any painted, plated or plastic surface. Clean up any spilled brake fluid immediately. Wash the area with soapy water and rinse thoroughly.

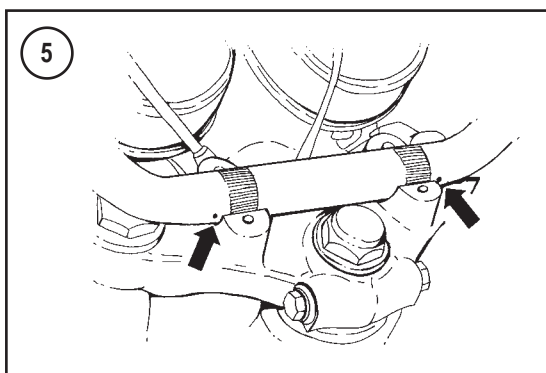
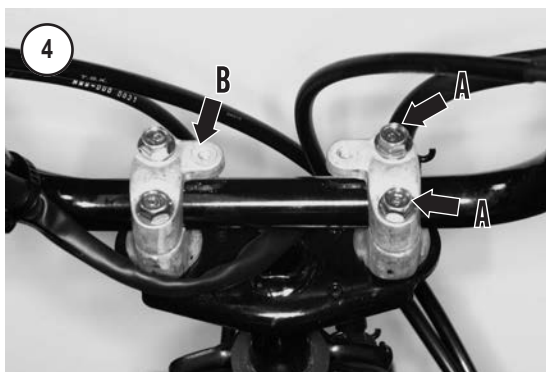
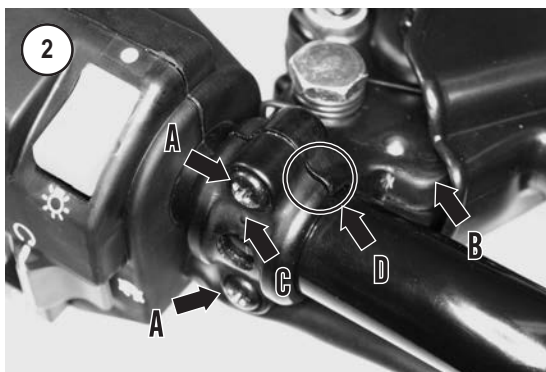
1. Remove the handlebar cover as described in Chapter Fourteen.
2. Remove the wire bands securing the wiring harness to the handlebar.
3. Remove the two throttle housing clamp screws (A, **Figure 1**) and the clamp. Remove the throttle



housing (B, **Figure 1**) and lay it over the front fender. Make sure the throttle cable is not kinked.

4. Remove the clamp bolts (C, **Figure 1**) from the front master cylinder. Remove the front master cylinder, and lay it over the front fender. Keep the reservoir in an upright position to minimize loss of brake fluid and to keep air from entering the brake system. The hydraulic brake line does not have to be removed from the master cylinder.

5. Remove the clamp screws (A, **Figure 2**) from the rear brake lever housing. Remove the housing (B, **Figure 2**) and lay it over the front fender. Make sure the cables are not kinked.



6. Remove the switch housing screws (**Figure 3**). Separate the switch halves, and set the assembly aside.

7. Remove the upper handlebar holder mounting bolts (A, **Figure 4**) from each handlebar holder. Remove the upper holders and handlebar.

Installation

1. Position the handlebar on the lower handlebar holders and hold it in place.

2. Set each upper handlebar holder in place so its cover boss faces forward as shown in B, **Figure 4**.

3. Align the punch mark on the handlebar with the top surface of the lower holders (**Figure 5**).

4. Install the handlebar holder bolts (A, **Figure 4**). Tighten the forward bolts first and then the rear bolts. Tighten each bolt securely.

5. Install the left switch housing by performing the following:

- Fit the pin on the rear switch housing half into the hole in the handlebar (**Figure 6**) and then install the switch housing.
- Tighten the upper switch housing screw first and then the lower screw (**Figure 3**).

6. Install the rear brake lever housing by performing the following:

- Fit the rear brake lever housing and its clamp into place on the handlebar. Position the clamp so its punch mark (C, **Figure 2**) faces up.
- Align the edge of the housing with the punch mark (D, **Figure 2**) on the handlebar.
- Install the clamp screws. Tighten the upper screw first and then the lower screw.

7. Install the master cylinder by performing the following:

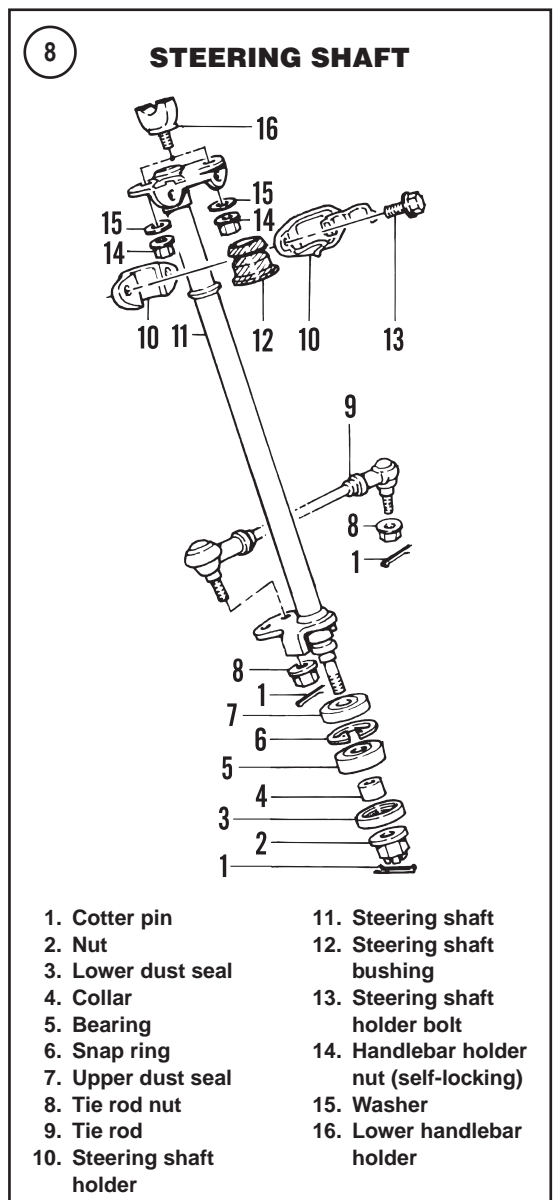
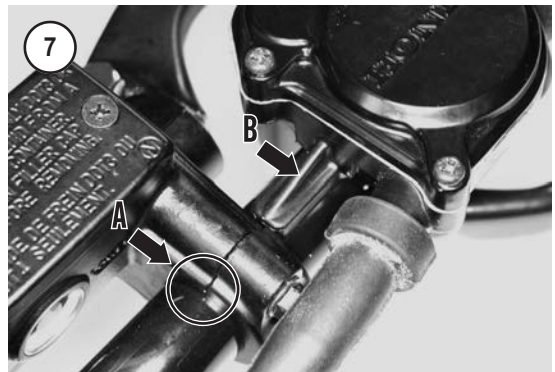
- a. Fit the master cylinder and its clamp into place on the handlebar. Position the clamp so its UP mark (D, **Figure 1**) faces up.
 - b. Align the edge of the master cylinder housing with the punch mark (A, **Figure 7**) on the handlebar.
 - c. Install the master cylinder clamp bolts. Tighten the bolts to 12 N•m (106 in.-lb.). Tighten the upper bolt first and then the lower bolt.
8. Install the throttle housing by aligning the line on the throttle housing (B, **Figure 7**) with the edge of the master cylinder. Install the clamp and tighten the clamp screws securely (A, **Figure 1**).
 9. Secure the wiring harness to the handlebar with the wire bands.
 10. Check all cable adjustments as described in Chapter Three.
 11. Check that the front brake works properly.
 12. Check that each handlebar switch works properly.
 13. Install the handlebar cover (Chapter Fourteen).

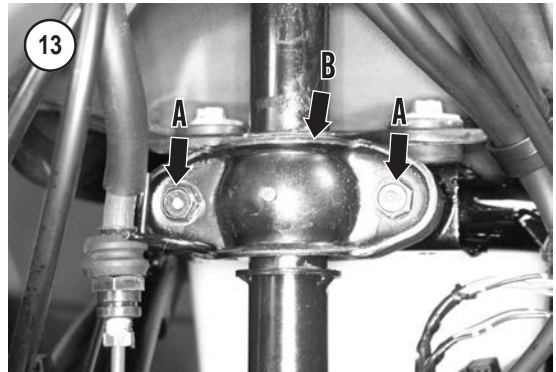
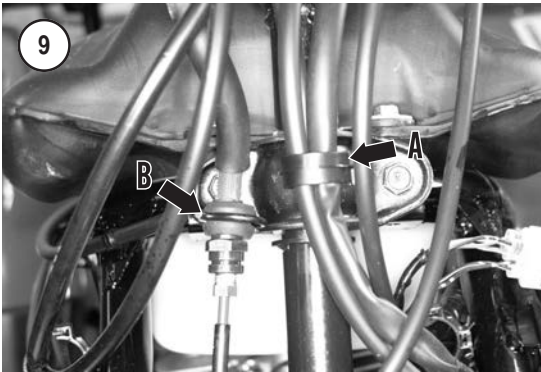
STEERING SHAFT

Refer to **Figure 8**.

Removal

1. Remove the front fender as described in Chapter Fourteen.
2. Open the wire clamp (A, **Figure 9**) on the steering shaft holder, and release the wires.
3. Release the brake hose (B, **Figure 9**) from the clamp on the steering shaft holder.
4. Remove the lower handlebar holder nuts and washers (**Figure 10**). Discard the lower handlebar holder locknuts. New ones must be installed during assembly.
5. Pull the handlebar assembly back so the brake hose, cables or wiring harness are not damaged. Support the handlebar so the master cylinder remains upright. This minimizes the loss of brake fluid and keeps air from entering the brake system.
6. Disconnect the tie rods from the steering arm by performing the following:
 - a. Remove the cotter pin (A, **Figure 11**) from each inner tie rod end.
 - b. Hold the flats of each ball joint (C, **Figure 11**) with a wrench, and remove the tie rod nut (B).





- c. Disconnect the tie rod from the steering arm.
7. Remove the cotter pin (A, **Figure 12**) from the bottom of the steering shaft.
8. Remove the steering shaft nut (B, **Figure 12**) from the steering shaft.
9. Remove the steering shaft holder bolts (A, **Figure 13**) and the holder assembly (B).
10. Remove the steering shaft from the frame.

Installation

1. Pack the lips of the steering shaft bushing with lithium grease, and install the bushing onto the steering shaft so its UP mark faces toward the handlebar.
2. Install the steering shaft into the frame.
3. Install the steering shaft holder (B, **Figure 13**) over the bushing and install the bolts (A). Tighten the steering shaft holder bolts to 32 N•m (24 ft.-lb.).
4. Apply lithium grease to the flange and threads of the steering shaft nut. Install the steering shaft nut (B, **Figure 12**), and tighten the nut to 108 N•m (80 ft.-lb.). Secure the nut with a *new* cotter pin and bend the ends over completely.
5. Install the tie rods by performing the following:
 - a. Fit each inner tie rod end (**Figure 11**) into its mounting boss on the steering arm.
 - b. Install the tie rod nut onto each tie rod. Tighten each tie rod nut to 54 N•m (40 ft.-lb.).
 - c. Install a *new* cotter pin through the hole in the stud and bend the ends over completely.
6. Set the handlebar assembly into place on the steering shaft. Check the routing of the brake hose, cables and wiring harness.
7. Install the washers and secure the handlebar with *new* handlebar lower holder nuts (**Figure 10**). Tighten the nuts to 39 N•m (29 ft.-lb.).

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